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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,135	01/18/2002	William J. Cote	BUR919980100US2	2527

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IBM MICROELECTRONICS
INTELLECTUAL PROPERTY LAW
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EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT PAPER NUMBER

1755

DATE MAILED: 02/11/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,135

Applicant(s)

COTE ET AL.

Examiner

Michael A Marcheschi

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-- Th MAILING DATE of this communication appears on th cov r sheet with the correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 29-32 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ | 6) <input type="checkbox"/> Other: |

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The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The disclosure is objected to because of the following informalities:

The specification does not define the continuing data, as required.

Appropriate correction is required.

Claims 29-30 and 32 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The new matter added to claim 29 (and dependent claims 30 and 32) is the limitation that the oxidizing agent "consists of a metal-based compound" because the specification never literally defines this. The specification on page 8, lines 5-9 define various oxidizing agents that can be used, but it is the examiners position that the added limitation is broader in scope than the specific oxidizers defined. For example, permanganate and cerium nitrate are a metal-based oxidizers, but as can be seen, these oxidizers are not listed in the instant specification. In view of this, the added limitation is new matter since it is broader in scope than the specification teachings (i.e. the specification does not support any and all metal-based oxidizers).

It is requested that applicants point out the support for any added subject matter.

Claims 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over either (1) Kaufman et al. (416) and Kaufman et al. (306) for the same reasons set forth in the previous office action (rejection of claims 29-30) which are incorporated herein by reference.

The limitation of new claim 31 (ferric nitrate oxidizing agent) has been addressed in the previous office action.

The limitations of new claim 32 are encompassed by the reference in column 11, lines 49-52 of Kaufman et al. (416) and column 11, lines 39-41 of Kaufman et al.(306). From these teachings, the removal rate of the barrier layer is desirably high and the removal rate of the copper layer is desirably low. The broad interpretation of this encompasses the limitations of new claim 32 in the absence of any evidence showing the contrary.

Applicant's arguments filed 11/22/02 have been fully considered but they are not persuasive.

Applicants argue that the two Kaufman et al. references teach away from using the metal-based oxidizer (which is new matter-see above) because both references teach the use of acids or bases that preferably have no metal ions associated therewith. This is not persuasive because (1), as applicants are aware, **"A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments"** See *In re Van Marter*, 144 USPQ 421, (2) these acids or bases are defined as the pH controllers and not the oxidizers, and (3) the references do not exclude the use of metal-based oxidizers. In view of this, the references do not teach away from the use of metal-based oxidizers, contrary to applicant's position. Applicants also appear to argue that the use of a metal-based compounds, as the oxidizer, enhances the

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copper removal rate so that a higher selectivity to the barrier layer is obtained. The examiner fails to see any evidence supporting this position, thus this comment is deemed moot. Finally, since applicants have not presented any arguments based on the ferric nitrate limitation, as being obvious, which is set forth in the previous office action, it can be reasonably presumed that a prima facie case of obviousness has been established.

In view of the teachings as set forth above, it is still the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

“A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ

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545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968)". In addition, "A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.

"A generic disclosure renders a claimed species prima facie obvious. *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991); *In re Woodruff* 16 USPQ 2d 1934; *Merk & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (Fed. Cir. 1983); *In re Susi* 169 USPQ 423 (CCPA 1971)".

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548. Evidence of unexpected results must be commensurate in scope with the subject matter claimed. *In re Linder* 173 USPQ 356.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Marcheschi whose telephone number is (703) 308-3815. The examiner can be normally be reached on Monday through Thursday between the hours of 8:30-6:00 and every other Friday between the hours of 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Mark L. Bell, can be reached at (703) 308-3823.

Amendments can also be sent by fax to the numbers set forth below:

For after final amendments, the fax number is (703) 872-9311;

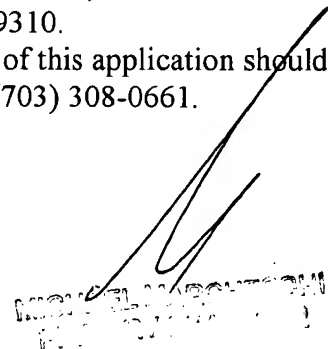
For non-final amendments, the fax number is 703 872-9310.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Michael Marcheschi

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A handwritten signature in black ink is written over a circular stamp. The signature is slanted and appears to be 'Michael Marcheschi'. The stamp is partially obscured by the signature and contains some illegible text.